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BY
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The benefits of education and of useful knowledge, generally diffused through a community, are essential to the preservation of a free government.

Sam Houston

Cultivated mind is the guardian genius of democracy. . . . It is the only dictator that freemen acknowledge and the only security that freemen desire.

Mirabeau B. Lamar

# A Comparison of the Premiums of the Teachers Insurance and Annuity Association with Those of Other Legal Reserve Companies

## § 1. Purpose and Data

The purpose of this paper is to compare the premiums of the Teachers Insurance and Annuity Association of America, as set forth in the Association's "Handbook of Life Insurance and Annuity Policies for Teachers," of 1918, with the corresponding premiums of other companies for non-participating insurance, as set forth in the "Handy Guide to Premium Rates, Applications and Policies of American Life Insurance Companies," of 1918, and, also, with the "Net Cost (not deducting cash value)," of participating insurance—reduced to an annual basis—of other companies, as set forth in "Best's Policy Analyses and Dividend Illustrations," 1918 edition. Only those companies are considered which had twenty-five millions of dollars of insurance in force at the end of the year 1917, according to the 1918 Edition of "Best's Life Insurance Reports."

Neither assessment insurance nor fraternal insurance nor industrial insurance is considered.

It should be stated at once that the exhibits to be made afford no immediate basis for a comparison of companies with each other, because of many essential differences in the policy contracts. But the policies of substantial companies, in *their average*, may be somewhat comparable with the policies of the Teachers Association; for the contractual benefits of the latter are less than those of some companies, greater than those of some others.

## § 2. Significant Differences in Life Insurance Policies

Some analysis of the most important differences in insurance policies would naturally precede a table of premiums charged.

The premium charged—"gross premium" or "office premium"—is usually conceived of as made up of two parts: (1) the "net premium" which is just adequate to pay for the benefits themselves according to some assumed mortality table and rate of interest, and (2) the "loading" which pays the expenses of the company and dividends to stockholders, if any. Although any desirable feature of a policy may be made to affect the gross premium through the loading, yet it may be said in general that—setting aside the company's expenses—the premium charged is determined by:

(1) The plan of insurance—whole life, limited payment life, endowment, term insurance, etc.

(2) The form of insurance—participating (with dividends) or non-participating.

(3) The disability benefits (if any)—waiver of premium, without or with an annuity, which may or may not reduce the insurance.

(4) The amount of insurance—in some cases.

### *(1) The Plan of Insurance*

In Best's Dividend Illustrations, the plans of insurance considered are: Ordinary Life (same as Whole Life), 20 Payment Life, 20 Year Endowment, 5 Year Term, and 10 Year Term. The comparisons made in this paper are based upon these plans, omitting 5 Year Term insurance. These plans have been standard for a long time; in these plans the competition of companies has been very sharp; and low figures are to be expected. Thus, for comparison, this data is good material.

In passing, it may be noted that different plans of insurance sometimes have about the same ultimate effect. A Whole Life policy for $1000 taken out at age 35 has at age 65 a policy-value of $505, using 3½% interest and the American Experience Mortality Table. A company not exacting a surrender charge would pay upon surrender of the policy this $505 to such a policy holder—who could purchase with it for himself a pension. Again, a 20 Payment Life policy for $1000 taken out at age 45 or earlier, would have at age 65 a policy-value of $688. Thus, a whole life policy or a limited-payment life policy is potentially an endowment policy for an amount somewhat less than the face of the policy. Moreover, the holder of a life policy is not forced to give up his insurance at any time, but he may at his own convenience take advantage of what may be called the endowment feature (after one or two years, perhaps).

Some companies issue an endowment policy maturing at age 85 in place of a whole life policy. This policy is usually classed as a whole life policy. Indeed, the net premium on the endowment policy for $1000 maturing at age 85 is at age 35 only $.10 more than the net premium for a whole life policy; at age 45, the difference is only $.22. In the tables that follow, endowments at age 85 are included, classed as whole life policies.

## (2) *Dividends*

The line of demarcation between a participating policy (one which entitles the holder to dividends), and a non-participating policy is usually sharp. But policies are issued, classed as non-participating policies, which do pay dividends after the expiration of a number of years. (See Handy Guide 1918, pages 593, 599, Missouri State Life Insurance Co.)

The so-called "dividend" is merely a return of an unused excess in the premium charge. In general, these dividends increase with the age of the policy. It is difficult, then, to make a fair comparison between a participating and a non-participating policy. On the one hand, a thirty dollar premium with return of five dollars as dividend at the end of a year is not the equivalent of a twenty-five dollar premium—partly, because of loss of interest, partly, because dividends are not returned to the estate of those who die. On the other hand, the annual cost of a participating policy, computed for a certain period of years, is presumably greater than it will be if the policy is continued; for the usual increase of dividends will cut down the annual cost. In the tables presented in this paper, it will be seen that the annual cost for twenty years is less than the annual cost for ten years—with few exceptions. For example, on ordinary life insurance taken out at age 35 with the Mutual Benefit Life Insurance Company, the annual cost on a ten-year basis was $21.30; on a twenty-year basis, $19.90.

To furnish data for computing an adjusted annual cost of insurance, the Mutual Benefit Life Insurance Company, kindly consented to send schedules of dividends on old policies. The above $19.90 was first increased by $.30, to compensate for the annual loss occasioned by the payment of the 20 dividends at the end of the year instead of at the beginning. From the $20.20 thus obtained was deducted $1.40, computed by Am. Exp., 3½% as the annual value from age 35 of the excess of the dividends after age 55, with due allowance for the dividend at age 55. This gave $18.80 as an adjusted annual cost for whole life insurance at age 35. The same method was applied to age 45. A similar method was applied to 20-pay life insurance at age 35; in this case however, the distribution of the entire dividend after age 55 was made over the ages 35 to 54. By the foregoing methods the following figures were obtained:

Adjusted Net Annual Cost of Insurance of $1000—Mutual Benefit Life Insurance Company

| | |
|---|---|
| Ordinary Life at age 35 | $18.80 |
| Ordinary Life at age 45 | 27.90 |
| Twenty-Pay Life at age 35 | 23.70 |

These figures may be compared with:

Net Annual Premium for Insurance of $1000—American Experience, Three and One-half Per cent

| | |
|---|---|
| Ordinary Life at age 35 | $19.91 |
| Ordinary Life at age 45 | 28.35 |
| Twenty-Pay Life at age 35 | 27.40 |

The net cost of insurance in the Mutual Benefit for the 20-pay life at age 35 for 20 years is given by Best as $532; that is, $26.60 per year. This $26.60 does not take into consideration the fact that the policy, now paid up, will become a source of revenue; but represents merely the difference between cash paid and cash received in the past.

The above comparisons need occasion no surprise; for it is well known that with well-managed companies the mortality rate has been much less on the average than that indicated by the American Experience Mortality Table, and that the companies have earned more than 3½% on their investments. The net rate earned on mean admitted assets of the Mutual Benefit for 1917 was 4.6%, and the ratio of actual to expected mortality for this company for the five years 1913-17 was about 58%, according to Best's Life Insurance Reports, 1918.

An extreme case illustrating how dividends may increase is cited in *The Pelican* of January, 1915. Mr. Joseph L. Winslow, of Portland, Maine, took out in 1846 a whole life policy for $3,500 in the Mutual Benefit Life Insurance Company, the annual premium being $54.60. The dividend for 1915 on this policy was $57.78; it was $3.18 more than the premium.

But some attention must be paid to the number of lapsed and surrendered policies. *The foregoing adjusted figures for the Mutual Benefit are applicable only to that group of policy holders who did not withdraw during life.*

In *The Pelican* of May, 1903, there is a record by years of the 648 policies issued by the Mutual Benefit in 1845. At the end of 10 years, 32% had lapsed or had been surrendered; at the end of 20 years, 38%. At the end of 20 years, there were in force 30% of the original 648, some policies having expired and some having been paid as death claims.

It is conceivable that many companies would not care to publish a record of policies lapsed and surrendered.

### (3) *Disability Benefits*

Among the various forms of benefit granted policy holders who become totally disabled—unable to engage in a gainful occupation—may be mentioned the following:

(a) The insured is not required to pay premiums. (The premium is "waived.")

(b) The insured is not required to pay premiums. Furthermore, the face of the policy becomes payable in 10 or 20 annual installments—beginning soon after proof of total disability—to the insured instead of to the beneficiary.

(c) The insured is not required to pay premiums. Furthermore, he becomes the recipient of an annual pension of about one-tenth the face of the policy, while his insurance remains at its full face value.

Obviously, the benefit (b) is intermediate in value between benefits (a) and (c). In the case of ordinary life insurance, term insurance and endowment, the relation between (a) and (c) is simple, assuming that the annuity ceases with the insurance. If the premium on $1000 is $25, then under (c) the total disability benefit is $125 annually, instead of $25 annually as under (a). In this case the benefit (c) is worth five times as much as the benefit (a).

Certain companies list separately their premiums for insurance with disability benefit and for insurance without disability benefit. The following companies give a disability benefit of the form (c) above—either an annuity of 1/10 or a monthly annuity of 1/120 or of 1/100 of the face of the policy—and their charges for this annuity as computed from the 1918 Handy Guide are listed.

ANNUAL CHARGE FOR DISABILITY BENEFIT ON $1000 POLICY

Waiver of Premium and Pension of about One-Tenth the Face of the Policy. (Handy Guide, 1918)

| | Age 35 | | Age 45 | | |
|---|---|---|---|---|---|
| | Whole Life | 20-Pay Life | Whole Life | 20-Pay Life | 20-Yr. End. |
| Equitable (N. Y.) | $1.51 | $1.61 | $2.32 | $2.31 | $2.01 |
| Guardian (N. Y.) | 1.73 | 1.77 | 2.71 | 2.48 | 2.26 |
| New York (N. Y.) | 1.35 | 1.42 | 2.07 | 2.06 | 1.77 |
| Northwestern Nat. (Minn.) | 1.64 | 1.75 | 2.51 | 2.50 | 2.19 |
| Penn. Mut. (Phila.) | 1.79 | 1.86 | 2.75 | 2.73 | 2.41 |
| Philadelphia (Phila.) | 1.76 | 1.87 | 2.68 | 2.67 | 2.32 |
| Travelers (Hartford) | 1.51 | 1.64 | 2.32 | 2.30 | 2.40 |
| Average | $1.61 | $1.70 | $2.48 | $2.44 | $2.19 |

Two of these companies list also their premiums for insurance with waiver-of-premium disability benefit only. The charge of the Teachers Insurance and Annuity Association is listed below with the charges of these companies.

ANNUAL CHARGE FOR DISABILITY BENEFIT ON $1000 POLICY

Waiver of Premium Only (Handy Guide, 1918)

| | Age 35 | | Age 45 | | |
|---|---|---|---|---|---|
| | Whole Life | 20-Pay Life | Whole Life | 20-Pay Life | 20-Yr. End. |
| Northwestern National | $ .40 | $ .28 | $ .81 | $ .72 | $ .84 |
| Philadelphia | .31 | .21 | .61 | .60 | .72 |
| Teachers Ins. and A. A. | $ .28 | $ .17 | $ .53 | $ .47 | $ .58 |

It is assumed here that the disability charge made by the Teachers Association is the gross premium, as per Handbook, minus the net premium by American Experience, 3½%.

It will be seen from the figures of the Northwestern National Life Insurance Company and the Philadelphia Life Insurance Company that the waiver of premium is the smaller part of the double disability benefit. If the Teachers Association were to give the double benefit—waiver plus annuity of 1/10—computed from their charges as listed above, this would require as an additional charge:

| Whole Life Age 35 | Whole Life Age 45 | 20-Yr. End. Age 45 |
|---|---|---|
| $1.41 | $1.87 | $1.35 |

In the case of most companies giving disability benefits, the benefit is conditioned upon the *disability being declared before the age 60 is reached—sometimes, the age 55. The Teachers Association extends this to age 65.*

### (*4*). *Insurance of $5000*

Some companies recognize that it costs less to handle one policy of $5000 than five policies of $1000 each. Obviously, the clerical work is less. But there is some evidence that the mortality rate on large policies is greater than that on small policies. However, some companies offer $5000 policies at lower rates. Sometimes these policies—frequently called "economic policies"—are less liberal, perhaps the disability benefit is curtailed.

PREMIUMS ON WHOLE LIFE INSURANCE

On Basis of $5000, per $1000 (Handy Guide, 1918)

| | Age 35 | | | Age 45 | | |
|---|---|---|---|---|---|---|
| | $5000 per $1000 | Straight $1000 | Difference | $5000 per $1000 | Straight $1000 | Difference |
| Equitable (Ia.) | 20.09 | ..... | .... | 28.61 | ..... | .... |
| International | 20.11 | 22.20 | 2.09 | 28.63 | 31.87 | 3.24 |
| Metropolitan | 21.40 | 22.00 | 0.60 | 30.48 | 31.42 | 0.94 |
| Michigan Mut. | 20.09 | 21.61 | 1.52 | 28.61 | 30.84 | 2.23 |
| West Coast— San Francisco | 20.11 | 22.81 | 2.70 | 28.63 | 32.46 | 3.83 |

The above rates are non-participating, except in the case of the Metropolitan Life Insurance Company.

The Handy Guide of 1918 also lists the following premiums for policies issued by the Atlantic Life Insurance Company, designated "Economic" with a foot note that the premiums in the Whole Life policies are payable until age 75.

| Age 35 | | Age 45 | |
|---|---|---|---|
| Whole Life | 20-Pay Life | Whole Life | 20-Pay Life |
| $18.82 | $25.87 | $25.07 | $30.22 |

## § 3. Pensions or Annuities

Annuity rates (single-premiums or "cash" premiums) based only upon one life are listed in the Handy Guide of 1918. The Phoenix Mutual states that its annuities are non-participating; no company states that its annuities are participating.

The rates of four companies are directly comparable with those of the Teachers Association, as they are given on the monthly basis. The Handbook of the Teachers Association gives on pages 56 and 57 the monthly annuity purchased by $1000, for ages 25–70.

The monthly annuity purchased by $1000 is, and should be, less than one-third of the quarterly annuity so purchased; but this difference is not greater than eleven cents for the companies that give rates for both cases.

The quarterly annuities purchased at age 65 by a single cash payment of $1000 to the company will be listed in the order in which they appear in the Handy Guide of 1918, pages 1162–1195. And one-third of each of these items will be listed as somewhat comparable with the monthly annuity offered by the Teachers Association. Also, the monthly annuities actually found in the Handy Guide will be listed.

The Teachers Association suggests as desirable for teachers two policies, one for term insurance to some such age as 65, and the other for a pension. As before noted, about the same result can be obtained by a single whole life policy, a limited-payment life policy, or an endowment policy—the cash-surrender value or endowment value being used to pay for the pension.

In making a choice, some attention should be paid to the well known fact that an investment subject to call bears, in general, a smaller rate of interest than a time investment. If the pension is to be provided by the cash-surrender value or the endowment value of an insurance policy, the money invested is subject to call; that is, the policy holder can get a loan of an appropriate amount in accord with the New York law. His money invested, however, is earning only 3½%—subject, further, to the American Experience Mortality Table, which does not favor the policy holder, to state the case mildly. On the other hand, if the teacher chooses to provide for a pension by a separate policy, his investment is not subject to call, but it earns 4%—a rate not encroached upon by any mortality table.

By the pension policy, the teacher can provide for $500 monthly (see page 37 of Handbook). The maximum insurance now offered by the Teachers Association is $10,000, which even on the endowment plan would provide for a pension of little more than $100 monthly (see page 57).

The foregoing comparison of interest rates is based upon the policy contracts. If the Teachers Association gives super-contractual benefits, it is fair to suppose that dividends to holders of insurance policies—resulting from a gain from interest and not merely a gain from mortality—will be balanced equitably by some benefit to holders of pension policies, perhaps, by the granting of a higher interest rate than 4%.

The discussion of the possible participation of a college in the payment of premiums is beyond the scope of this paper.

## § 4. Summary and Discussion

It should be emphasized that the tables of premiums which follow form no equitable basis for the comparison with each other of the companies concerned, because of great differences in the benefits conferred by different policies.

The average of these premiums, however, may be of value in estimating what men *do pay for insurance.* And the averages may be equitably compared with the premiums of a company whose policies provide for a reasonable number of liberal benefits and desirable features.

Some insurance has, indeed, cost less than the average. This may be due to the fact that the company chosen is wisely managed, or that it has had a run of good luck in mortality experience which may or may not be repeated, or that its policies are less liberal than those of the average company. Again, some very low net costs of insurance have been realized on participating policies which have been in force a long time. But it is well known that the percentage of lapsed and surrendered policies in the early years of the policy is very large. Thus, a large percentage of policy-holders receive only the smaller dividends.

Some companies give special rates for insurance of $5000 or more. Very few of the larger companies publish such special rates in the Handy Guide.

On many policies there is no disability benefit. During permanent disability, some companies only waive the payment of premiums. This is true of the Teachers Insurance and Annuity Association. Other companies pay the insured in addition an annuity or pension, which may or may not decrease the insurance.

*It will be seen that the premiums for insurance of the Teachers Insurance and Annuity Association charged to college teachers are less than the corresponding non-participating premiums of any other company listed in the following table, with the exception of the Travelers' premium on whole life at age 35, a premium with no provision for disability. In a few cases, the net annual cost for participating insurance falls below the corresponding premiums of the Teachers Association. For pensions or annuities the Teachers Association charges less than any other company.*

It should be noted that the premiums of teachers who leave the profession are immediately augmented by one-ninth; so that the offer of the Teachers Association will not appeal strongly to those teachers who contemplate a possible change of occupation.

The policies of the Teachers Association are to be classed as non-participating, because no dividends are promised. If dividends had been promised, it would have been necessary to distribute the dividends in just the manner prescribed by the New York law. The Handbook conveys no hint that any dividends will be paid.

The *chance* that the Teachers Association will give dividends—not necessarily *annual* dividends—or some super-contractual benefits rests upon the following considerations:

(1). The actual mortality rates—barring the results of the recent influenza epidemic—have been for many years much lower than that indicated by the American Experience Table of Mortality.

(2). Insurance companies earn more than 3½% on their investments.

(3). The charter of the Teachers Insurance and Annuity Association prescribes that the Association shall "conduct its business without profit to the corporation or to its stockholders." Again, in the Handbook on page 4 there appears: "Through an endowment, contributed in the form of capital and surplus, it is able to offer insurance at cost, without the overhead charges which in the ordinary company absorb a considerable portion of the premiums paid by the policy-holders." Again, page 11: "The current expenses of the organization, including taxes, will be met from the income from the paid-in capital and surplus, which are, respectively, five and ten times the legal requirement."

As a conjecture, it may be added that it seems possible that the Teachers Association may wish to widen the gap already existing between its premiums and those of the mass of its competitors. In the United States it has been found that an insurance company employing no agents has hard work to make any headway, or even to hold its own. The Teachers Association "will employ no soliciting agents," page 11.

## § 5. The Limitations of the Tables

The choice of material was governed primarily by Best's Policy Analyses and Dividend Illustrations, of 1918. The illustrations there given apply to Ordinary Life (Whole Life), 20 Payment Life, 20 Year Endowment, 5 Year Term, and 10 Year Term insurance. Of these five forms, the 5 Year Term was omitted: participating policies, in general, make their best records on long time contracts.

The Handbook of Teachers Insurance and Annuity Association gives rates on Endowment policies maturing at age 65 only. Thus for a comparison, the age 45 was to be chosen. For specimen insurance policies, the age usually selected by companies is 35. The comparisons in the following tables are based upon these two ages, 35 and 45.

The attempt was made to adhere rather closely to the standard plans of insurance mentioned above. But the Endowment at age 85 has been classed with Ordinary Life, as is customary—the two policies having in general, a value differing only by a few cents on $1000. The so-called "Economic Policies" mentioned in Part 4 of Section 2 are not included. Policies for which the initial premium is greater than subsequent premiums are not included.

Only companies with 25 millions of dollars of insurance in force at the end of 1917, according to Best's Life Insurance Reports, 1918, are included. Some companies list separately their "Industrial Insurance." This insurance, involving high collection cost for small premiums is not comparable with insurance on a basis of $1000 or more. The latter only is considered in this paper. But, as some companies do not separate out for Best's Reports their industrial business, the selection of companies on the foregoing basis is not perfect.

The 10-year term non-participating premiums of one company—$15.65 at age 35, $23.10 at age 45—were omitted; as they are abnormally large, and would disturb the average too much for the purposes of this comparison.

Unfortunately, in Best's Dividend Illustrations, the requisite data for certain large insurance companies is not given.

Owing to the common use of the 5-year deferred dividend in Canada, the data obtained for Canada is regrettably small.

*From the foregoing limitations of the material, it is obvious that the tables do not give a complete survey of the life insurance business of today. But it is hoped that they will in some measure portray the general trend and the common deviations therefrom.*

For the various plans of insurance, the simple average of premiums was obtained, and also the weighted mean—with insurance in force to the nearest ten millions of dollars as a weight. This weighting is rather crude; for the distribution of insurance among the various plans is quite different in the several companies. However, it is doubtless more informing than the simple average. The weighted mean is compared with the corresponding premium of the Teachers Insurance and Annuity Association.

## ANNUAL PREMIUMS FOR LIFE INSURANCE OF $1000

### Non-Participating (Handy Guide, 1918)

| Life Insurance Company | Insurance in millions of dollars | Age 35 | | | Age 45 | | | |
|---|---|---|---|---|---|---|---|---|
| | | 10 Yr. Term | Whole Life | 20 Pay Life | 10 Yr. Term | Whole Life | 20 Pay Life | 20 Yr. End. |
| Aetna ....... | 573 | ..... | 22.24 | 30.21 | ..... | 31.87 | 38.90 | 46.51 |
| Amer. Central | 47 | ..... | 22.32 | 30.65 | ..... | 32.02 | 39.47 | 47.37 |
| Amer.Nat. (Tex) | 66 | ..... | 22.89 | 30.94 | ..... | 32.60 | 39.82 | 48.44 |
| Bankers Res... | 40 | ..... | 22.61 | 30.72 | ..... | 32.61 | 39.88 | 48.30 |
| Capital (Col.) | 25 | ..... | 22.89 | 30.94 | ..... | 32.60 | 39.82 | 48.44 |
| Cen. of U. S. Ia. | 53 | ..... | 22.11 | 29.75 | ..... | 31.83 | 38.23 | 47.36 |
| Cen. States, Mo. | 30 | 13.40 | 23.70 | 31.71 | 18.94 | 33.32 | 40.50 | 49.08 |
| Columbian National ..... | 82 | 11.65 | 21.65 | 29.52 | 16.25 | 30.83 | 37.89 | 46.10 |
| Conn. General | 137 | 10.20 | 20.61 | 28.22 | 14.29 | 30.05 | 37.00 | 45.66 |
| Equitable (Ia) | 140 | ..... | ..... | 29.30 | ..... | ..... | 37.60 | 45.93 |
| Federal ...... | 25 | ..... | 22.70 | 30.71 | ..... | 32.32 | 39.50 | 48.08 |
| Franklin ..... | 62 | 12.61 | 22.79 | 30.92 | 17.58 | 32.45 | 39.78 | 47.47 |
| Great Southern (Texas).... | 49 | ..... | 22.84 | 31.06 | ..... | 32.52 | 39.87 | 48.40 |
| Illinois ...... | 85 | 11.70 | ..... | ..... | 16.32 | ..... | ..... | ..... |
| International . | 69 | 13.48 | 22.20 | 30.54 | 18.40 | 31.87 | 39.45 | 47.97 |
| Inter-Southern | 36 | 11.03 | 22.23 | 30.37 | 15.34 | 32.01 | 39.43 | 48.07 |
| Jefferson Stand. | 62 | 12.48 | 24.44 | 32.40 | 17.40 | 34.53 | 41.60 | ..... |
| Kansas City.. | 122 | 11.70 | 21.59 | 30.33 | 16.32 | 30.99 | 38.94 | 47.34 |
| Life of Virginia | 32 | ..... | 20.91 | 28.50 | ..... | 30.48 | 37.17 | 46.10 |
| Lincoln Nat. . | 63 | 10.20 | 22.41 | 30.34 | 14.36 | 32.00 | 39.03 | 47.37 |
| Michigan Mut. | 60 | 11.70 | 21.61 | 28.50 | 16.97 | 30.84 | 37.17 | 46.10 |
| Missouri State | 157 | 11.70 | 22.10 | 30.00 | 16.31 | 31.47 | 38.55 | 47.01 |
| Nat. of U. S. A. | 97 | 11.60 | 22.64 | 30.54 | 16.40 | 32.09 | 39.13 | 47.50 |
| N. Amer. (Ill.).. | 36 | ..... | 22.89 | 30.94 | ..... | 32.60 | 39.82 | 47.22 |
| Pacific Mutual | 186 | ..... | 21.60 | 29.30 | ..... | 31.20 | 37.95 | 46.30 |
| Pan-American. | 46 | ..... | 21.95 | 29.82 | ..... | 31.16 | 38.03 | 48.29 |
| Reliance ..... | 87 | 11.70 | 22.90 | 30.85 | 16.31 | 32.60 | 39.70 | 48.44 |
| Reserve Loan. | 31 | ..... | 22.89 | 30.94 | ..... | 32.60 | 39.82 | 49.12 |
| Scandia ...... | 31 | ..... | 23.04 | 30.92 | ..... | 33.04 | 39.93 | 48.23 |
| Southland .... | 30 | 12.69 | 22.70 | 30.79 | 19.08 | 32.32 | 39.58 | 48.23 |
| Southwestern . | 43 | 12.80 | 21.70 | 29.95 | 19.25 | 31.40 | 38.90 | 47.10 |
| State (Ind.).. | 87 | 12.07 | 21.78 | 29.90 | 16.83 | 31.28 | 38.39 | 46.79 |
| Travelers .... | 617 | 10.46 | 20.11 | 27.67 | 15.62 | 29.77 | 36.47 | 45.02 |
| Volunteer State | 29 | ..... | 21.90 | 30.52 | ..... | 31.44 | 39.26 | 47.76 |
| W.Coast-San F. | 41 | ..... | 22.81 | 30.62 | ..... | 32.46 | 39.32 | 47.81 |
| Western Union | 35 | 11.23 | 22.19 | 29.30 | 16.31 | 31.87 | 37.58 | 47.25 |
| Average ......... | | 11.81 | 22.29 | 30.22 | 16.75 | 31.91 | 38.96 | 47.42 |
| Weighted Mean... | | 11.32 | 21.79 | 29.66 | 16.21 | 31.39 | 38.36 | 46.67 |
| Teachers Assn.... | | 9.47 | 20.19 | 27.57 | 13.16 | 28.88 | 35.54 | 43.66 |
| Excess of W. Mean.. | | 20% | 8% | 8% | 23% | 9% | 8% | 7% |

## NET ANNUAL COST FOR LIFE INSURANCE OF $1000 FOR 10 OR 20 YEARS

Participating (Best's Dividend Illustrations, 1918)

| Life Insurance Company | Insurance in millions of dollars | Age 35 | | | | | Age 45 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 10 Year Term 10 yrs. | Whole Life 10 yrs. | Whole Life 20 yrs. | 20 Pay Life 10 yrs. | 20 Pay Life 20 yrs. | 10 Yr. Term 10 yrs. | Whole Life 10 yrs. | Whole Life 20 yrs. | 20 Pay Life 10 yrs. | 20 Pay Life 20 yrs. | 20 Pay End. 10 yrs. | 20 Yr. End. 20 yrs. |
| Aetna | 573 | ..... | 23.90 | 22.00 | 32.50 | 27.85 | ..... | 33.30 | 31.05 | 40.70 | 36.50 | 47.80 | 44.70 |
| Bankers Reserve | 40 | ..... | 24.20 | ..... | 33.10 | ..... | ..... | 33.60 | ..... | 42.20 | ..... | 48.80 | ..... |
| Berkshire | 88 | ..... | 22.70 | 21.75 | 31.90 | 29.40 | ..... | 32.00 | 31.40 | 40.10 | 38.70 | 48.00 | 48.45 |
| Connecticut General | 137 | ..... | 21.60 | ..... | 29.10 | ..... | ..... | 30.60 | ..... | 37.10 | ..... | 45.50 | ..... |
| Connecticut Mutual | 270 | ..... | 22.10 | 20.85 | 31.30 | 29.15 | ..... | 31.10 | 29.30 | 39.10 | 36.50 | 45.30 | 42.05 |
| Equitable (New York) | 1755 | ..... | 22.70 | ..... | 31.30 | ..... | ..... | 31.90 | ..... | 39.40 | ..... | 46.80 | ..... |
| Equitable (Iowa) | 140 | ..... | 21.40 | 20.60 | 29.50 | 27.15 | ..... | 30.30 | 29.20 | 38.00 | 34.25 | 46.40 | 43.65 |
| Fidelity | 142 | ..... | 23.60 | ..... | 32.40 | ..... | ..... | 33.80 | ..... | 41.70 | ..... | 48.90 | ..... |
| Home | 146 | 11.10 | 21.60 | ..... | 30.00 | ..... | 15.80 | 30.60 | ..... | 38.10 | ..... | 45.40 | ..... |
| Jefferson Standard | 62 | ..... | 22.10 | ..... | 30.30 | ..... | ..... | 31.60 | ..... | 39.10 | ..... | 47.30 | ..... |
| John Hancock | 450 | 11.30 | 22.10 | 21.70 | 30.10 | 28.50 | 15.80 | 31.50 | 31.30 | 38.80 | 37.75 | 47.50 | 46.30 |
| Massachusetts Mutual | 450 | 10.50 | 21.60 | ..... | 30.20 | ..... | 14.70 | 30.50 | ..... | 38.10 | ..... | 45.50 | ..... |
| Missouri State | 157 | ..... | 23.50 | ..... | 32.40 | ..... | ..... | 33.90 | ..... | 40.90 | ..... | 48.50 | ..... |
| Mutual Benefit | 915 | ..... | 21.30 | 19.90 | 30.20 | 26.60 | ..... | 30.20 | 28.45 | 38.10 | 34.60 | 45.80 | 42.90 |
| Mutual | 1773 | ..... | 22.10 | ..... | 30.60 | ..... | ..... | 31.10 | ..... | 38.50 | ..... | ..... | ..... |
| National of Vermont | 224 | 11.30 | 22.00 | 21.90 | 30.90 | 29.10 | 15.70 | 31.10 | 31.55 | 38.80 | 38.35 | 46.60 | 47.10 |
| New England | 375 | 11.10 | 22.10 | 21.70 | 31.00 | 29.05 | 15.30 | 31.10 | 31.10 | 39.00 | 38.10 | 46.60 | 47.15 |
| New York | 2673 | ..... | 22.00 | ..... | 30.60 | ..... | ..... | 31.40 | ..... | 38.90 | ..... | 46.20 | ..... |
| Northwestern Mutual | 1604 | ..... | 20.80 | ..... | 29.50 | ..... | ..... | 29.40 | ..... | 37.00 | ..... | 44.50 | ..... |
| Northwestern National | 54 | ..... | 23.50 | .... | 31.30 | ..... | ..... | 33.30 | ..... | 40.30 | ..... | 48.40 | ..... |
| Pacific Mutual | 186 | ..... | 22.70 | 22.20 | 31.30 | 28.90 | ..... | 31.80 | 32.25 | 39.00 | 38.35 | 46.10 | 46.00 |
| Pennsylvania Mutual | 758 | ..... | 22.00 | 21.10 | 31.40 | 28.05 | ..... | 31.00 | 30.45 | 39.20 | 36.95 | 46.60 | 46.30 |
| Philadelphia | 35 | 11.70 | 23.40 | ..... | 32.50 | ..... | 16.30 | 33.70 | ..... | 42.00 | ..... | 50.00 | ..... |
| Phoenix Mutual | 197 | 11.10 | 22.40 | ..... | 31.30 | ..... | 15.40 | 31.40 | ..... | 39.20 | ..... | 46.80 | ..... |
| Presbyterian Ministers | 25 | ..... | 17.70 | ..... | 26.20 | ..... | ..... | 25.00 | ..... | 32.20 | ..... | 39.40 | ..... |
| Provident | 389 | 10.00 | 22.10 | 20.05 | 28.90 | 27.60 | 13.90 | 31.90 | 28.30 | 37.70 | 35.55 | 45.30 | 43.60 |
| Scandia | 31 | ..... | 23.20 | ..... | 31.80 | ..... | ..... | 32.30 | ..... | 40.20 | ..... | 49.10 | ..... |
| Security Mutual | 55 | 12.60 | 24.60 | ..... | 33.90 | ..... | 17.60 | 34.60 | ..... | 42.80 | ..... | 50.20 | ..... |
| State Mutual | 223 | 11.10 | 21.90 | 21.40 | 30.70 | 28.50 | 15.30 | 30.90 | 30.75 | 38.60 | 37.45 | 46.30 | 46.15 |
| Union Central | 522 | ..... | 20.80 | ..... | 28.70 | ..... | ..... | 28.90 | ..... | 36.00 | ..... | 44.50 | ..... |
| Great West (Canada) | 153 | ..... | 21.00 | ..... | 28.50 | ..... | ..... | 30.50 | ..... | 37.10 | ..... | 44.90 | ..... |
| Sun of Canada | 307 | ..... | 22.50 | ..... | 30.80 | ..... | ..... | 32.00 | ..... | 39.70 | ..... | 47.00 | ..... |
| Average | | 11.18 | 22.22 | 21.26 | 30.76 | 28.32 | 15.58 | 31.45 | 30.42 | 38.99 | 36.92 | 46.65 | 45.36 |
| Weighted Mean | | 10.92 | 22.00 | 21.07 | 30.58 | 27.99 | 15.20 | 31.12 | 30.13 | 38.63 | 36.55 | 46.17 | 44.99 |
| Teachers Association (Non-Participating) | | 9.47 | 20.19 | 20.19 | 27.57 | 27.57 | 13.16 | 28.88 | 28.88 | 35.54 | 35.54 | 43.66 | 43.66 |
| Excess of Weighted Mean over Teachers Association Premium | | 15% | 9% | 4% | 11% | 2% | 16% | 8% | 4% | 9% | 3% | 6% | 3% |

## ANNUITY PURCHASED BY $1000 AT AGE 65
(Handy Guide, 1918)

| | For Males | | | For Females | | |
|---|---|---|---|---|---|---|
| | Quarterly Payment | One-third Quarterly Payment | Monthly Payment | Quarterly Payment | One-third Quarterly Payment | Monthly Payment |
| Equitable (N. Y.)* | 24.61 | 8.20 | .... | 22.49 | 7.50 | .... |
| Aetna | 27.61 | 9.20 | .... | 24.17 | 8.06 | .... |
| American Bankers† | 27.01 | 9.00 | .... | 24.10 | 8.03 | .... |
| Commonwealth, N. W. | 26.63 | 8.88 | .... | 23.59 | 7.86 | .... |
| Equitable (Iowa) | 26.96 | 8.99 | .... | 23.98 | 7.99 | .... |
| Life of Virginia | 27.95 | 9.32 | .... | 24.45 | 8.15 | .... |
| Mass. Mutual | 26.29 | 8.76 | 8.65 | 22.81 | 7.60 | 7.51 |
| Metropolitan | 28.00 | 9.33 | ‡9.25 | 24.30 | 8.10 | ‡8.03 |
| National | 25.96 | 8.65 | .... | 23.50 | 7.83 | .... |
| Penn Mutual | 25.93 | 8.64 | .... | 23.08 | 7.69 | .... |
| Phoenix | 27.38 | 9.13 | 9.04 | 24.20 | 8.07 | 8.00 |
| Provident | 25.54 | 8.51 | 8.46 | 22.87 | 7.62 | 7.57 |
| Travelers | 27.62 | 9.21 | .... | 24.12 | 8.04 | .... |
| Average | ..... | 8.91 | 8.85 | ..... | 7.89 | 7.78 |
| Teachers Association | ..... | .... | 9.52 | ..... | .... | 8.33 |

*Also adopted by Mutual of New York and New York Life.

†Also American Life (Iowa), Columbian National, Connecticut General, German Mutual, Home, Illinois, Minnesota Mutual, Missouri State, National of U. S. of A., Pacific, Prudential, Security Mutual (N. Y.), Union Central, Union Mutual, West Coast-San Francisco.

‡Computed from the purchase price of $10 monthly—pro rata.